Northwest Iowa Community College Hosts Fourth Annual Engineering Expo

Northwest Iowa Community College hosted the fourth annual High School Engineering Expo Wednesday, May 4. The object of the NCC Engineering Expo was to promote engineering as an exciting field for young people and to assist high schools in providing STEM education outside of the classroom. The competition consisted of four phases: egg launch catapult/accuracy, egg launch catapult/distance, poster presentation, and a problem solving competition consisting of a set of five timed problems. Sixty-five students from northwest Iowa high schools participated in this daylong event.

Each of the teams conceptualized the design and built their catapults prior to the competition. The day of the Expo they set up their catapult in a designated launch area and launched raw eggs at a bull’s-eye target to test accuracy. Each team had three practice shots and five scored shots.

After the teams competed in the accuracy competition they had a distance competition to see whose catapult would throw an egg the farthest. This is held after the accuracy competition to make sure all the teams can push their catapults to their absolute limit and not have to worry about any damage to the catapult for their accuracy challenge.

The students also needed to create a poster that included the calculations of predicted distances of the catapulted egg, documentation of the design process, and a list of materials used. The poster needed to be visually attractive and demonstrate the group’s understanding of the engineering principles involved.

The problem solving portion was expanded this year to a series of five timed problems. The students had to finish each problem in order and could not move on to the next problem until the first problem was completed. They were given twenty minutes to complete all five problems. The team that completed all five problems in the least amount of time won.

Sheldon High student, Jake Roos, said, “We spent about a month designing and constructing our catapult and we had about two days of testing. We tested the catapult with raw eggs, hard boiled eggs, and even frozen eggs. They all threw differently. The regular eggs seemed to barrel roll to the target because the yolk was swishing around. The frozen eggs were like bullets because the yolk wasn’t moving. It has been a lot of fun!”

Sheldon’s Team Advisor, Chris Stotz, said, “I really like the competition. It is a fun and different activity for the kids to do. It incorporates so many disciplines: physics, trigonometry, geometry, and structural integrity. It is a great way for the kids to practice a lot of the applications we learn about in class.”
Thank you to all of our sponsors who make this event a success:

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Each school could win first, second or third for each problem. The Traveling Trophy/overall winner is the combination of all the scores from each problem.

**2016 Winners:**

**Overall Champion**
Trinity Christian 142.5 out of 200 points

**Presentation**
1. HMS-2 - 41 points
2. Trinity Christian - 36.5 points
3. HMS-1 - 35.75 points

**Accuracy**
1. Trinity Christian - 36 points
2. HMS-1 - 26 points
   - Sioux Center - 26 points
3. Orange City Career Academy - 24 points

**Longest Throw**
1. Sioux Center - 286’ 6”
2. Sheldon - 238’ 6”
3. HMS-1 - 207’ 2”

**Problem Solving**
1. Sioux Center Don’t Expect Anything
2. South O’Brien
3. Trinity

**Central Lyon**
Ross Krull                        Nash Knobloch                        Joe Katt
Brady Metzger                    Calen Black                          Hannah Sierpda
Dusty Ramsey                     Tyler Bloemendaal                   Advisor: Bill Allen
Dylan Zeiner                     Sam McCarty
Hartley-Melvin-Sanborn (HMS Hurling Hawks 1)
Madi Unrau
Hunter Dorhout
Hunter Orthmann
Cole Verbrugge
Jon Soto
Advisor: Daniel De Groot

HMS Hurling Hawks 2
Jordan Schiphoff
Morgan De Groot
Ashley Heetland
Elizabeth Spier
Grant Honken
Advisor: Daniel De Groot

Sioux Center
Marcus Winterfeld
Tanner Cleveringa
Jackson De Boer
Brady Schreiner
Jeffrey Heide
Logan Kruid
Colton Maasen
Advisor: John Doornenbal

Sioux Center - Don't Expect Anything
Aubrey Sandbulte
Clare Kortlever
Miranda Lammers
Maggie Kleyer
Andrea Verburg
Bryan Mouser
Lucas Boyer
Kati Schelling
Emily Schuiteman
Advisor: Joy Hurst
Sioux Center - Flying Fulcrums
Andrew TeGrotenhuis
Alex Gray
Dexter Hooyer
Ko Kieft
Tanner Rensink
Sam Schrader
Asha Winterfeld
Ben Baccam
Advisor: Joy Hurst

South O'Brien
Ben Aberson
Garrett Wagner
Ty Hoey
Joseph Rohwer
Carly Lundquist
Brian Haden
Advisor: Kim Poeckes

Trinity Christian
Joel Baker
Gysbert
Grace Huizenga
Mike Laning
Dolan Boonstra
Phil Boonstra
Advisor: John Huizenga

Sheldon:
Cole Stofferan
Tyler Brink
Jake Roos
Noah DeKok
Advisor: Chris Stotz

Orange City Career Academy
Taylor Van Der Zwaag
Layne Helmuth
Jacob Goergen
Dylan Bruhing
Advisor: Chris Stotz